

In re Application of: Yoseph SHAALTIEL et al.  
Serial No.: 10/554,387  
Filed: October 25, 2005  
Final Office Action Mailing Date: April 8, 2009

Examiner: Delia M. RAMIREZ  
Group Art Unit: 1652  
Attorney Docket: 30570

**In the Claims:**

1-97. (Canceled)

98. (Currently Amended) A human lysosomal protein comprising at least one xylose residue and at least one exposed mannose residue, wherein said human lysosomal protein comprises an amino acid sequence encoded by the nucleic acid as set forth in SEQ ID NO: 7 and wherein said human lysosomal protein is contiguously linked at its C terminus to a vacuolar targeting signal peptide and at its N-terminus to an N-terminal endoplasmic reticulum signal peptide, wherein said endoplasmic reticulum signal comprises SEQ ID NO: 1.

99. (Canceled)

100. (Previously Presented) The human lysosomal protein of claim 98, further comprising at least one fucose residue having an alpha (1-3) glycosidic bond.

101-105. (Canceled)

106. (Previously Presented) The human lysosomal protein of claim 98, wherein said vacuolar targeting signal peptide is a basic tobacco chitinase A gene vacuolar targeting signal.

107. (Previously Presented) The human lysosomal protein of claim 106, wherein said vacuolar targeting signal peptide comprises SEQ ID NO: 2.

108. (Canceled)

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109. (Previously Presented) The human lysosomal protein of claim 98, wherein said amino acid sequence comprises the amino acid sequence as set forth in SEQ ID NO: 8.

110-113. (Canceled)

114. (Previously Presented) A pharmaceutical composition comprising the human lysosomal protein of claim 98 and a pharmaceutically acceptable carrier.

115. (Currently Amended) A plant cell preparation comprising a human lysosomal protein comprising at least one xylose residue and at least one exposed mannose residue wherein said human lysosomal protein comprises an amino acid sequence encoded by the nucleic acid as set forth in SEQ ID NO: 7 and wherein said human lysosomal protein is contiguously linked at its C terminus to a vacuolar targeting signal peptide and at its N-terminus to an N-terminal endoplasmic reticulum signal peptide, wherein said endoplasmic reticulum signal comprises SEQ ID NO: 1.

116. (Canceled)

117. (Previously Presented) The plant cell preparation of claim 115, further comprising at least one fucose residue having an alpha (1-3) glycosidic bond.

118-119. (Canceled)

120. (Previously Presented) The plant cell preparation of claim 115, wherein said human lysosomal protein comprises the amino acid sequence as set forth in SEQ ID NO: 8.

121-123. (Canceled)

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124. (Previously Presented) The plant cell preparation of claim 115, wherein said vacuolar targeting signal peptide is a basic tobacco chitinase A gene vacuolar targeting signal.

125. (Previously Presented) The plant cell preparation of claim 124, wherein said vacuolar targeting signal peptide comprises SEQ ID NO: 2.

126. (Canceled)

127. (Currently Amended) The plant cell preparation of claim 115, wherein the main glycan structure of the lysosomal protein of said plant cell preparation ~~said human lysosomal protein having comprises~~ at least one xylose residue and at least one exposed mannose residue ~~is the main glycan structure of the lysosomal proteins of said plant cell preparation~~, as measured by linkage analysis.

128. (Previously Presented) A pharmaceutical composition comprising the plant cell preparation of claim 115 and a pharmaceutically acceptable carrier.

129-141. (Canceled)

142. (Previously Presented) A human lysosomal protein comprising a human glucocerebrosidase which comprises the amino acid sequence as set forth in SEQ ID NO: 8, wherein said human glucocerebrosidase is linked at its C-terminus to the vacuolar targeting signal peptide as set forth in SEQ ID NO: 2 and at its N-terminus to the endoplasmic reticulum signal peptide as set forth in SEQ ID NO: 1.

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143. (Previously Presented) A human lysosomal protein comprising a human glucocerebrosidase which comprises the amino acid sequence as set forth in SEQ ID NO: 14.

144. (Previously Presented) A pharmaceutical composition comprising the human lysosomal protein of claim 142 and a pharmaceutically acceptable carrier.

145. (Previously Presented) A pharmaceutical composition comprising the human lysosomal protein of claim 143 and a pharmaceutically acceptable carrier.

146. (Currently Amended) A human lysosomal protein comprising a human glucocerebrosidase which comprises the amino acid sequence ~~encoded by the polynucleotide as set forth in SEQ ID NO: 87~~, wherein said human glucocerebrosidase ~~comprises at least one xylose residue and~~ at least one exposed mannose residue, and is linked at its C-terminus to a vacuolar targeting signal peptide and at its N-terminus to the endoplasmic reticulum signal peptide as set forth in SEQ ID NO: 1.

147-149. (Canceled)

150. (New) A method of producing a lysosomal glucocerebrosidase protein, the method comprising culturing a plant cell preparation comprising the human lysosomal glucocerebrosidase protein of claim 98.

151. (New) The method of claim 150, wherein said plant cell preparation is the plant cell preparation of claim 115.

152. (New) The method of claim 150, wherein said cell culture is cultured in suspension.

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153. (New) The method of claim 150, further comprising:  
purifying said protein.